# Stored Products Pests

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# Top Ten Most Commonly Infested Products

- Cookie/Cake Mix
- Flour
- Corn Meal
- Pasta
- Cereals, spices, rice
- Beans/peas
- Grits
- Farina
- Barley
- Fry mix

# Commonly infested produc

Flour

Corn Meal

Rice

# Products infested sometimes

## Dry beans and peas

## Spices

# Signs of Infested Stored Products

- Live or dead insects
- Pin holes in the package
- Frass (insect excrement)
- Cast skins from molting
- Webbing (moth larvae)

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# Live and dead beetles at bottom of bag of flour

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# Beetles feeding on ice cream cone

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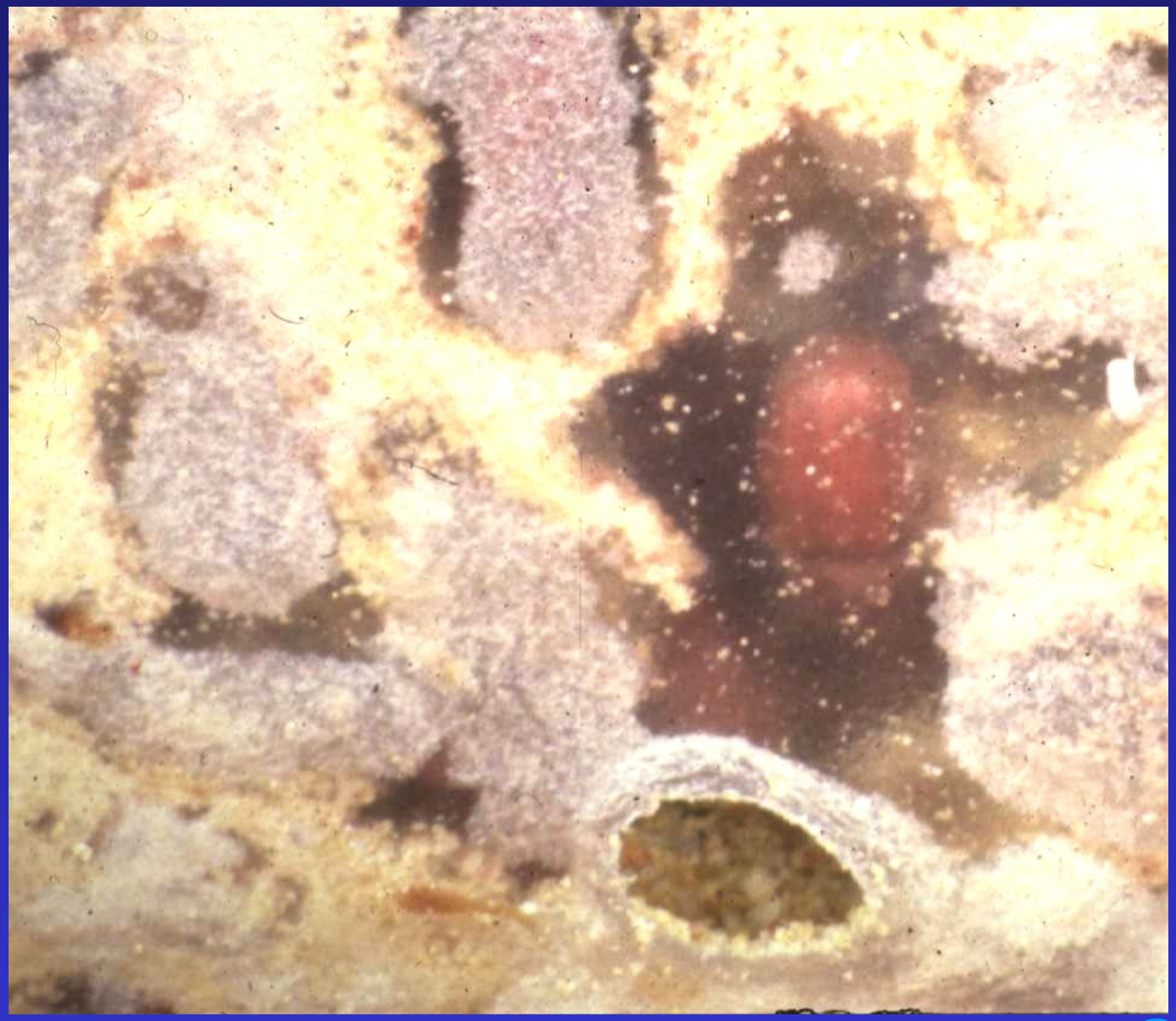
# Pinhole in plastic bot



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# Pinholes and frass in pet food

# Frass at bottom of jar

# Frass in bottom of ba

# Live Dermestid beetles and cast skins in flour

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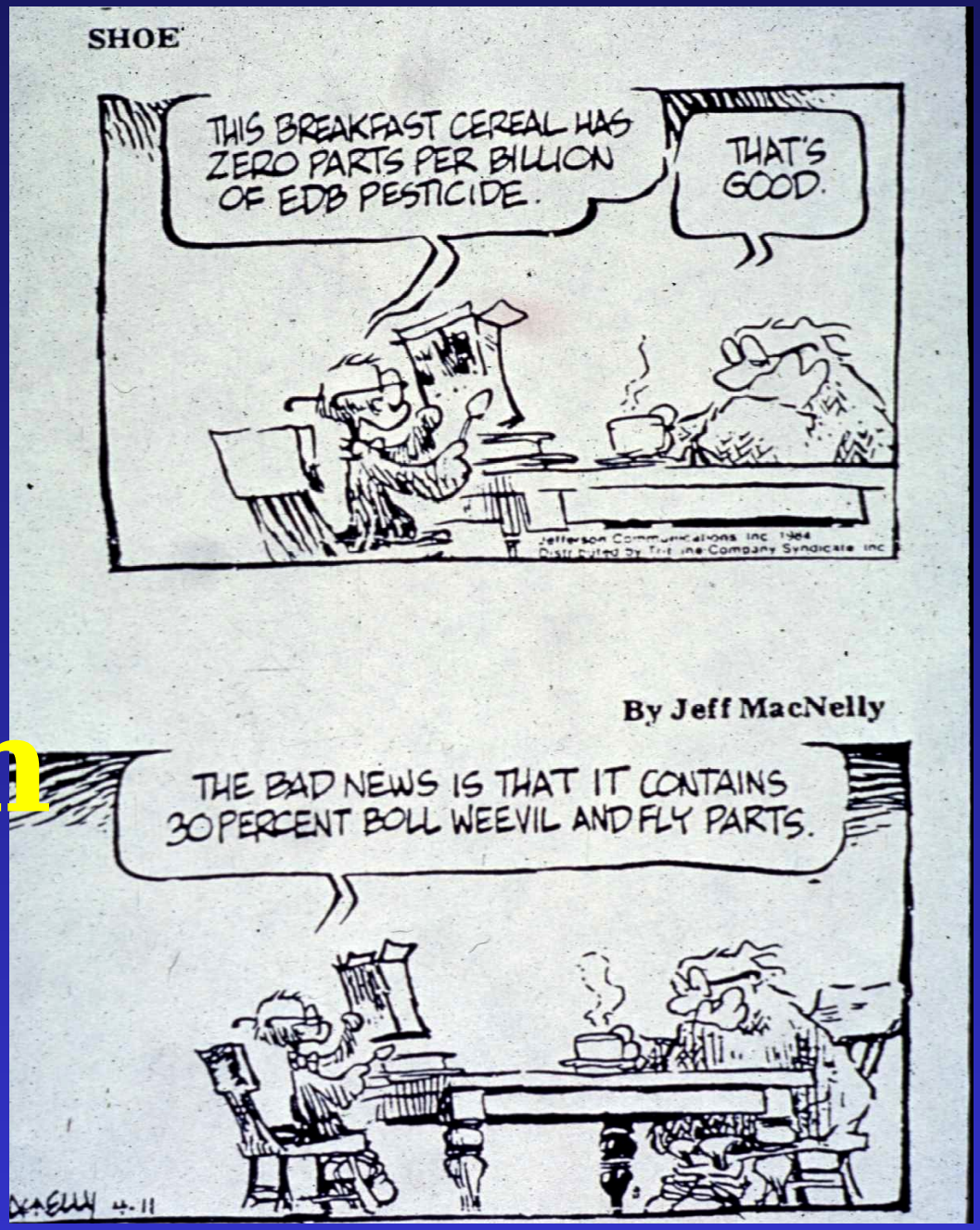
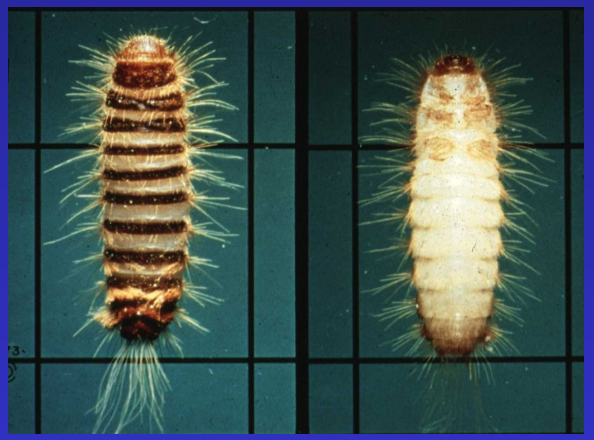
# Webbing on corn

# Allowable levels of infestation


SHOE
THIS BREAKFAST CEREAL HAS ZERO PARTS PER BILLION OF EDB PESTICIDE.
THAT'S GOOD.
By Jeff MacNelly
THE BAD NEWS IS THAT IT CONTAINS 30 PERCENT BOLL WEEVIL AND FLY PARTS.

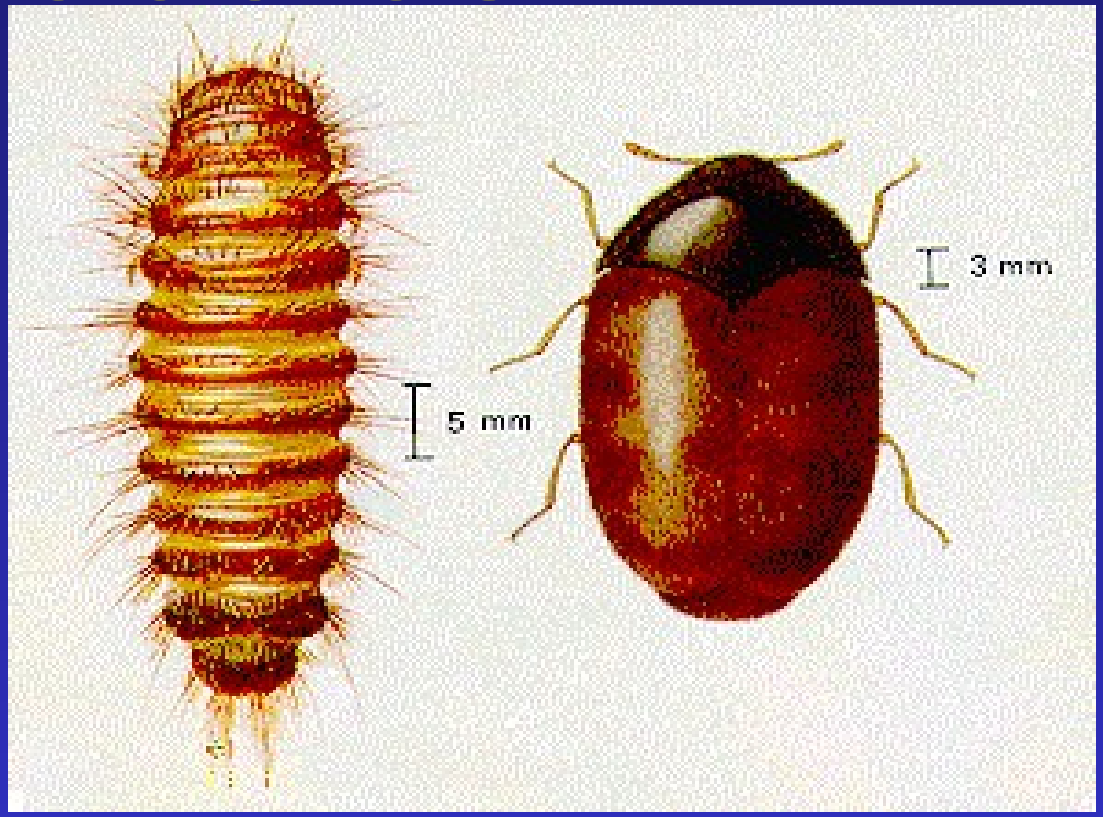
# Guidelines for Dermestid beetle infestation

- **Condemn the product if only <u>ONE</u> Dermestid beetle is found**
- **Types of Dermestid beetles:**
  - **Khapra beetle**
  - **Warehouse beetle**
  - **Black carpet beetle**
  - **Varied carpet beetle**



# Trogoderma beetles

Warehouse beetles

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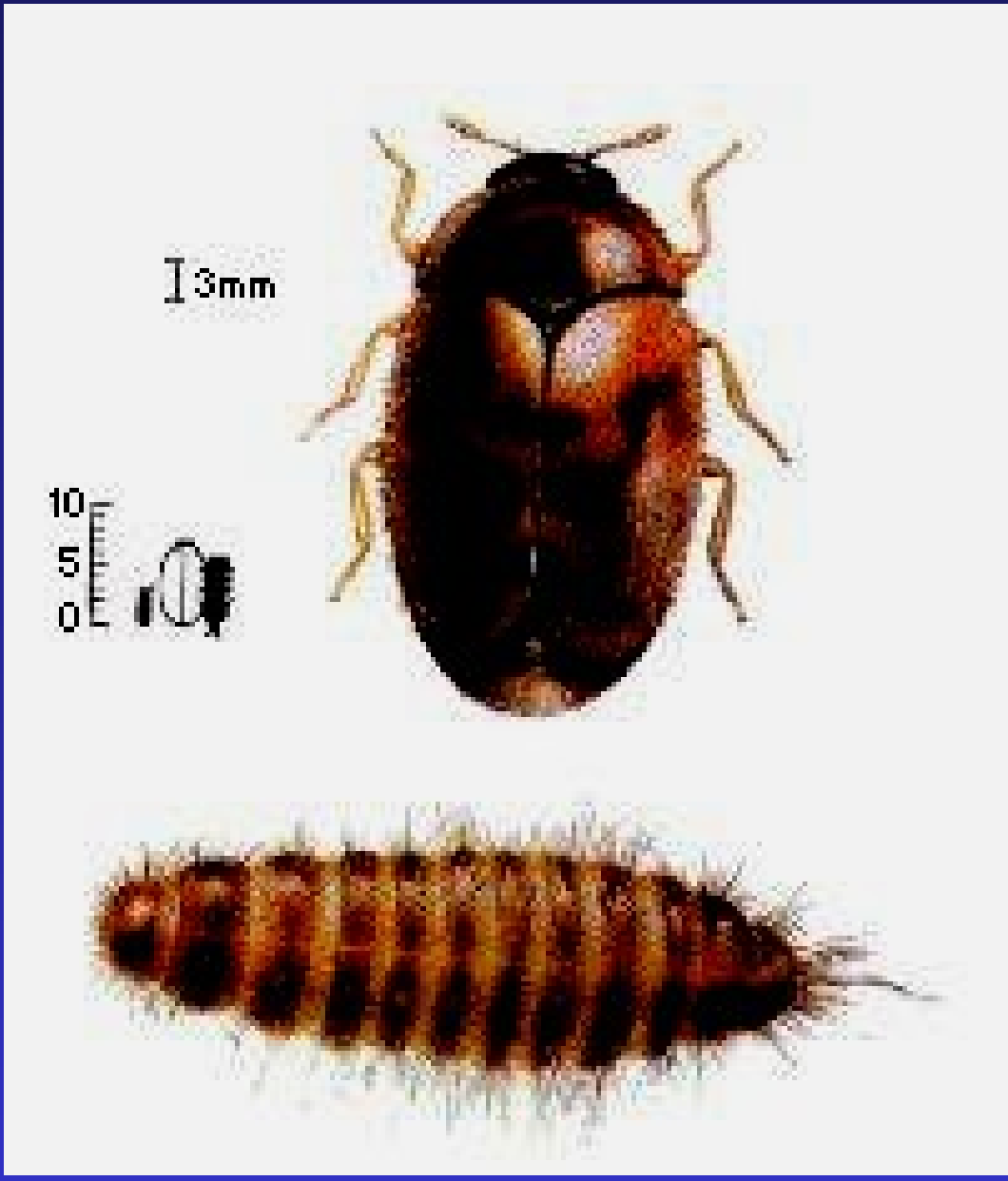
# Khapra Beetle

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# Carpet Beetles

# Dermestid Beetles

Pupa

Larva

# Guidelines for Tribolium beetle infestation

- Condemn the product if it has 3 or more beetles per pound
- Types of Tribolium beetles:
  - Red flour beetle
  - Confused flour beetle
  - American black flour beetle
  - European flour beetle

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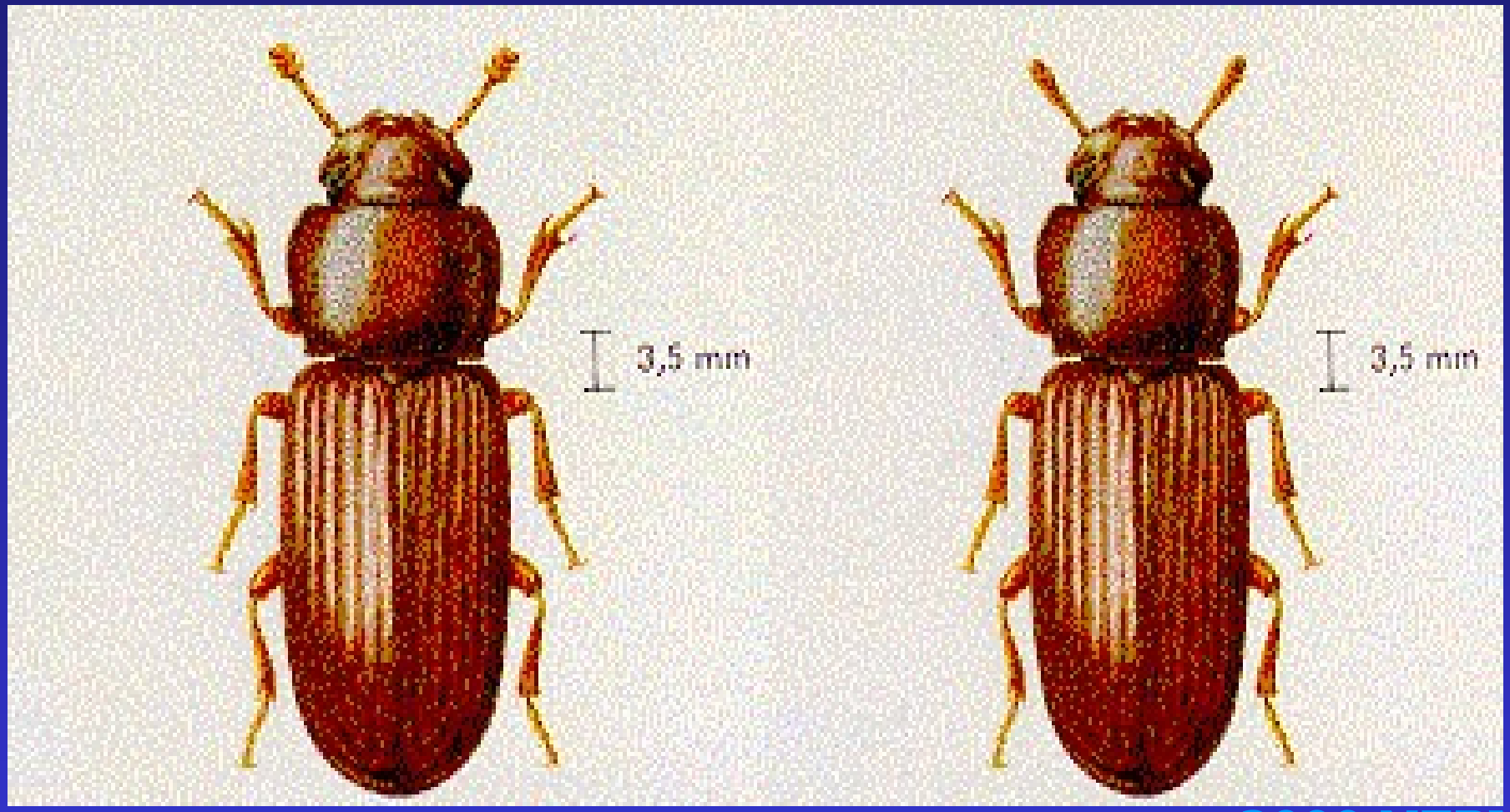
# Red/Confused Flour Beetles

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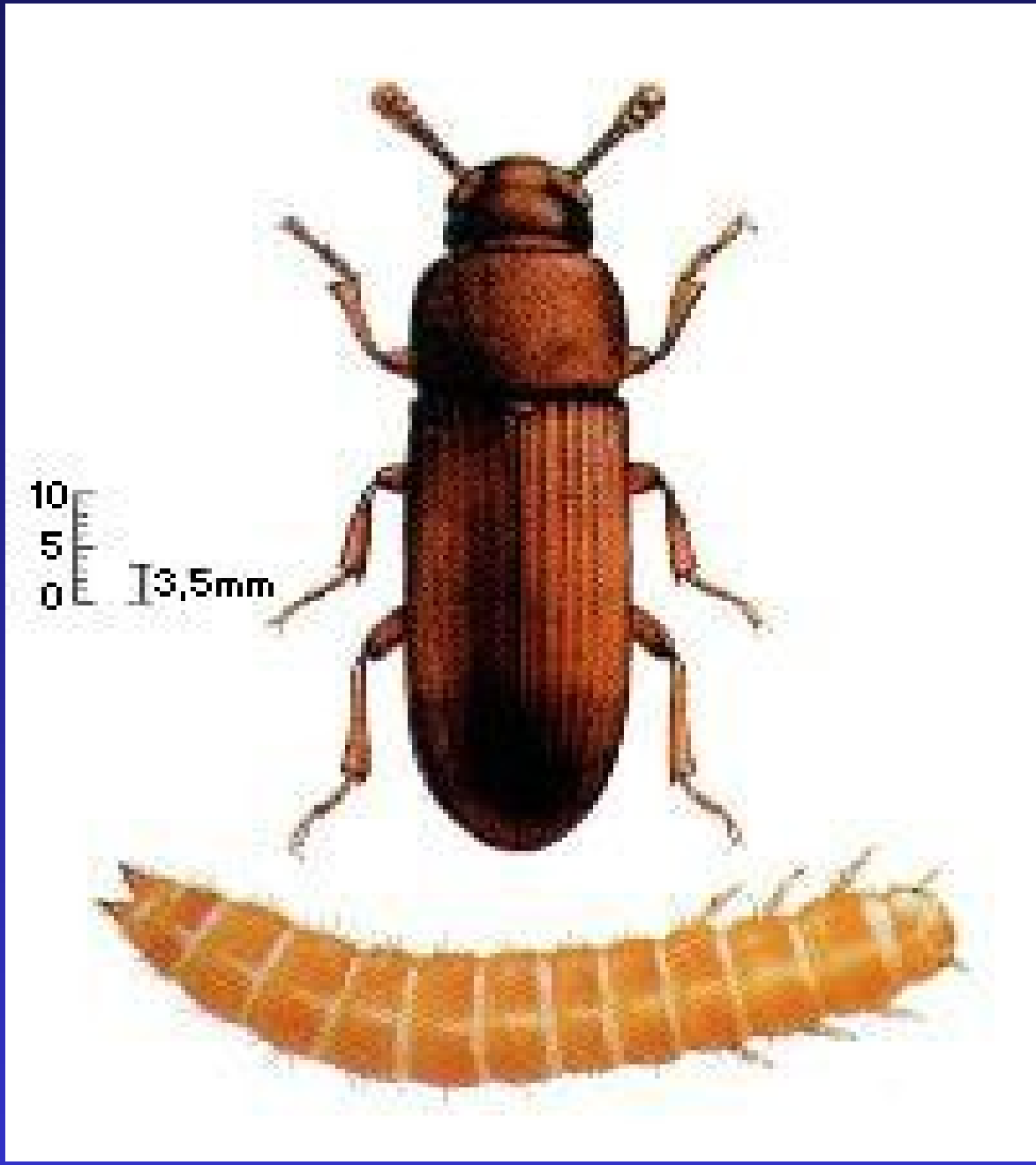
# Red Flour Beetle Adult and Larva



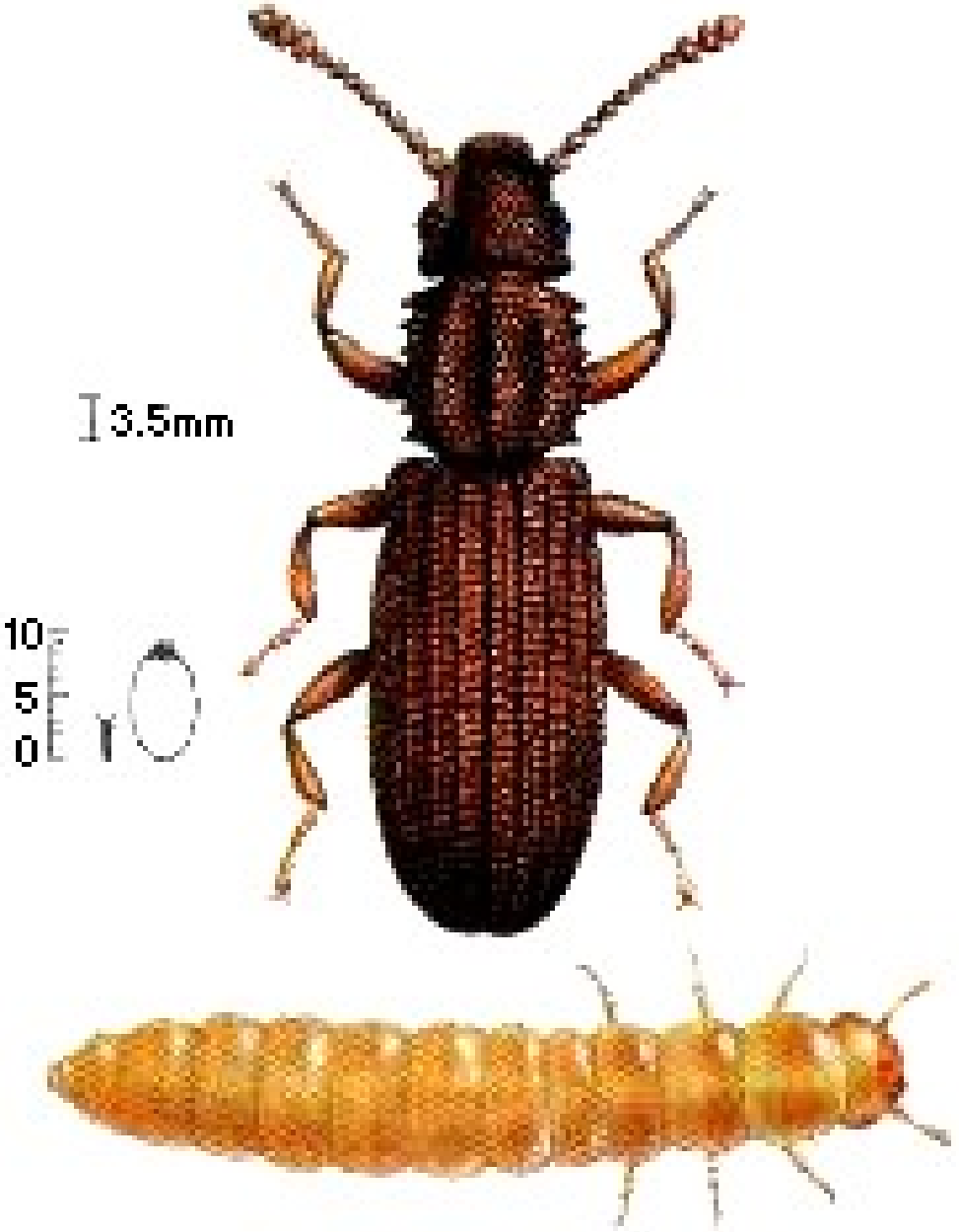
# Guidelines for Other Insects

- **Condemn the product if it has 7 or more other insects per pound**
- **Types of other insects:**
  - **Sawtoothed grain beetle**
  - **Indian meal moth**
  - **Drugstore beetle**
  - **Cigarette beetle**
  - **Weevils**

#1 stored products pest

# Sawtoothed Grain Beetle

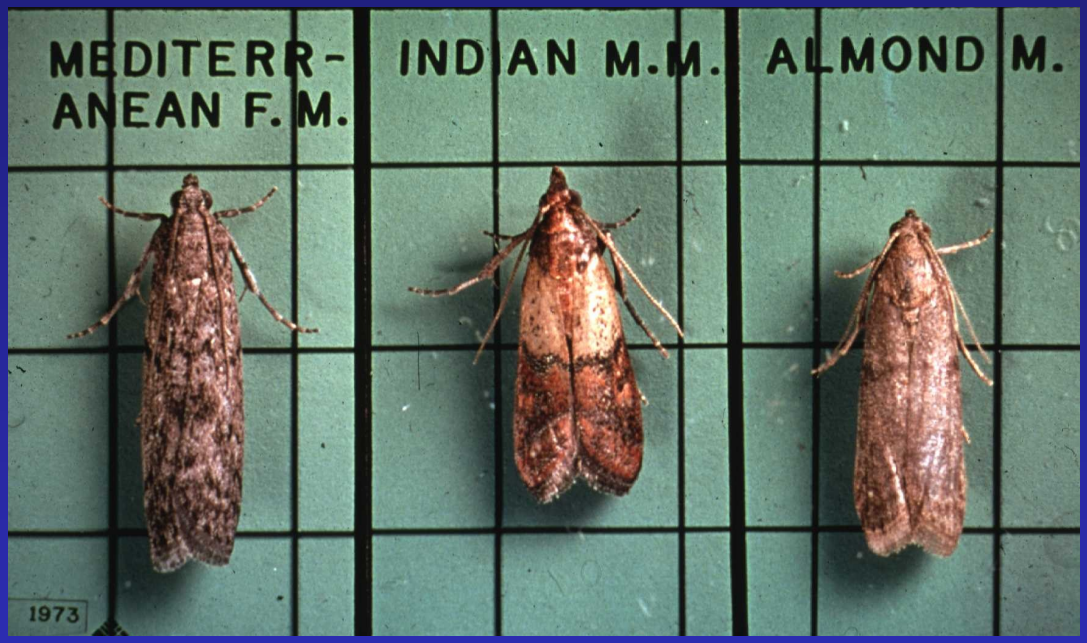
# Sawtoothed Grain Beetle



# Indian Meal Moth

# Meal Moths

Indian meal moth has lighter patch on forewing




Other species of mot

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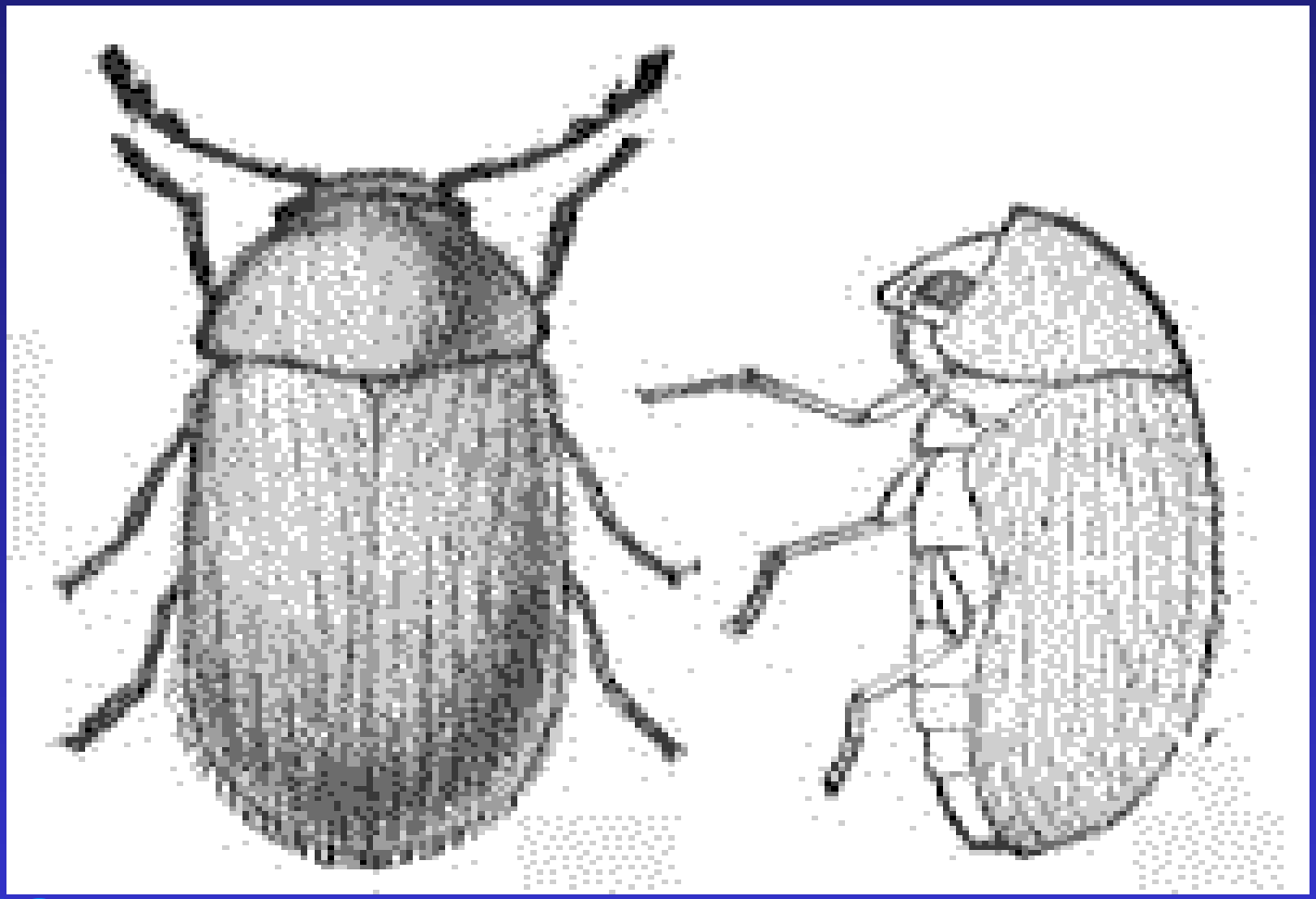
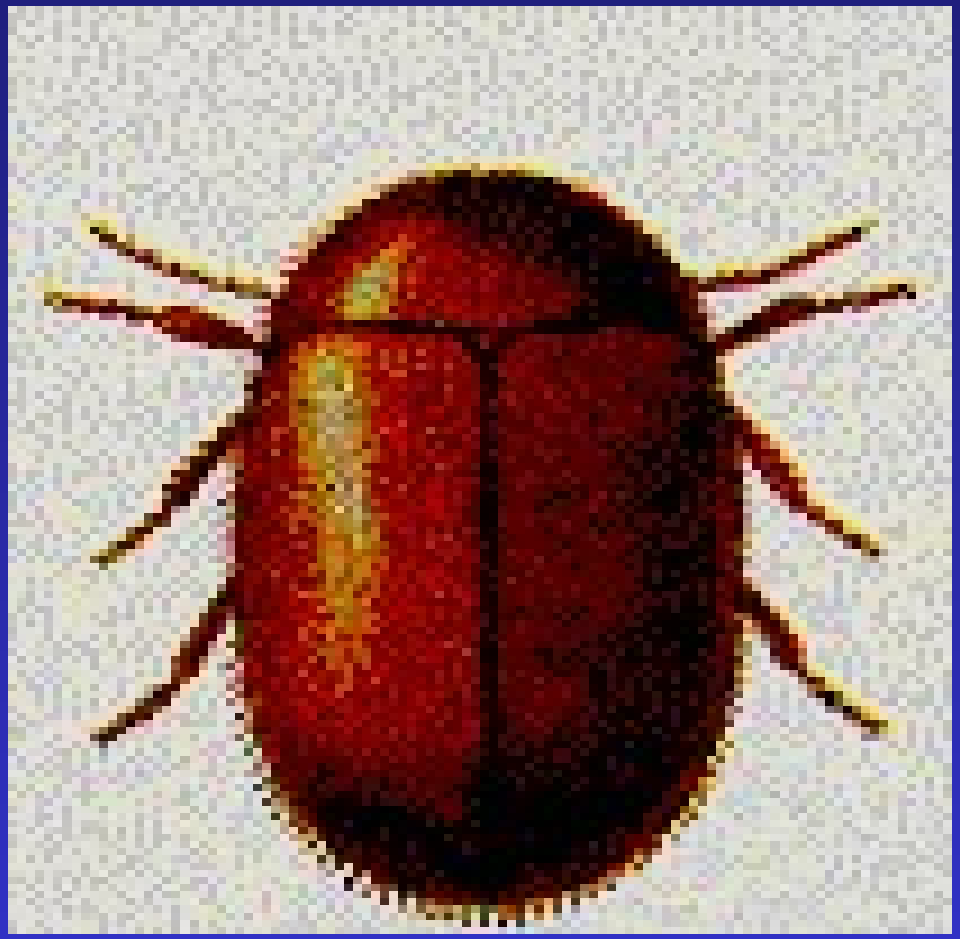
# Drugstore Beetle



# Cigarette Beetle



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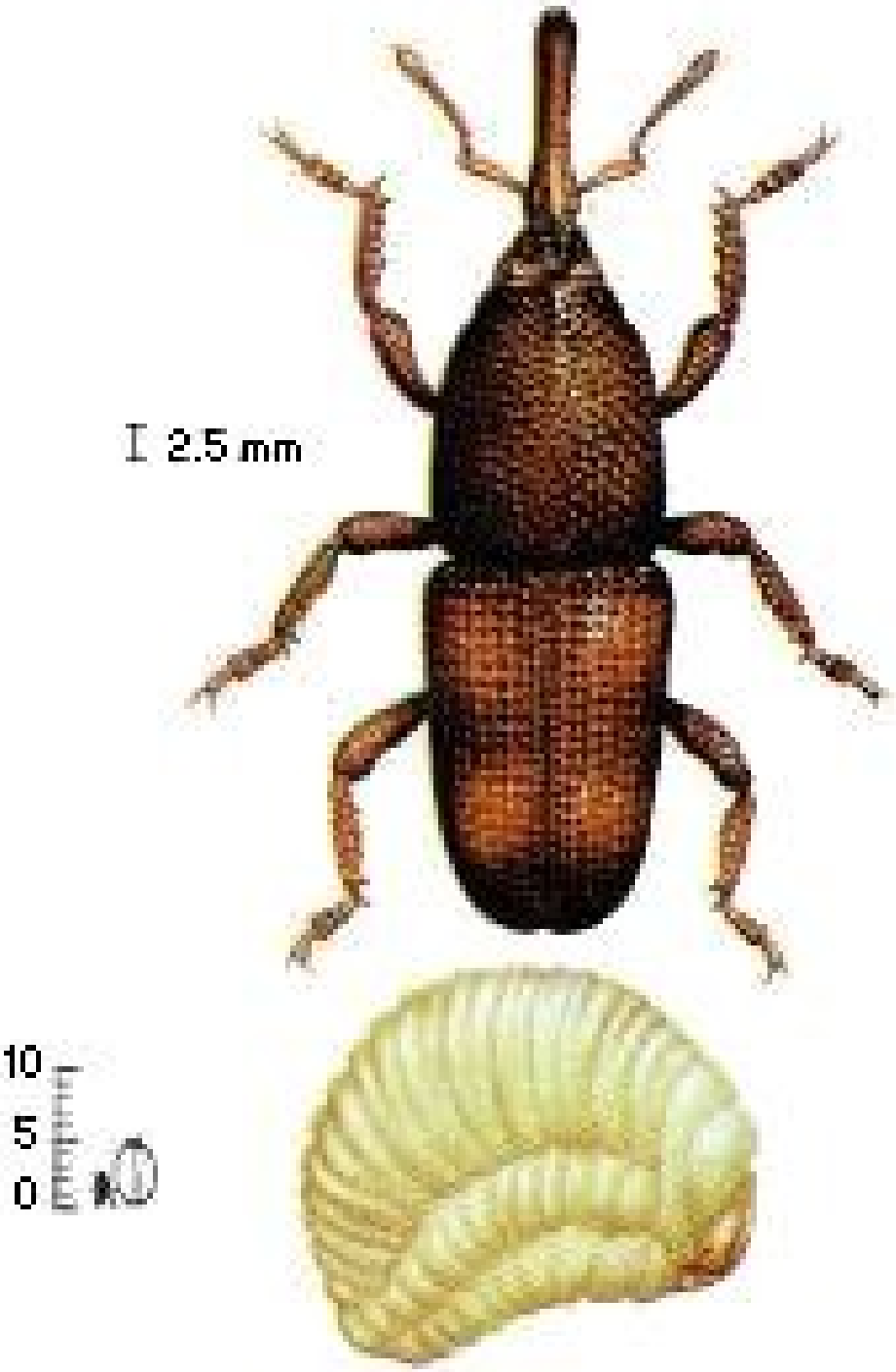
# Rice Weevil



# Granary weevil damag

Weevils are internal feeders

They leave empty husks

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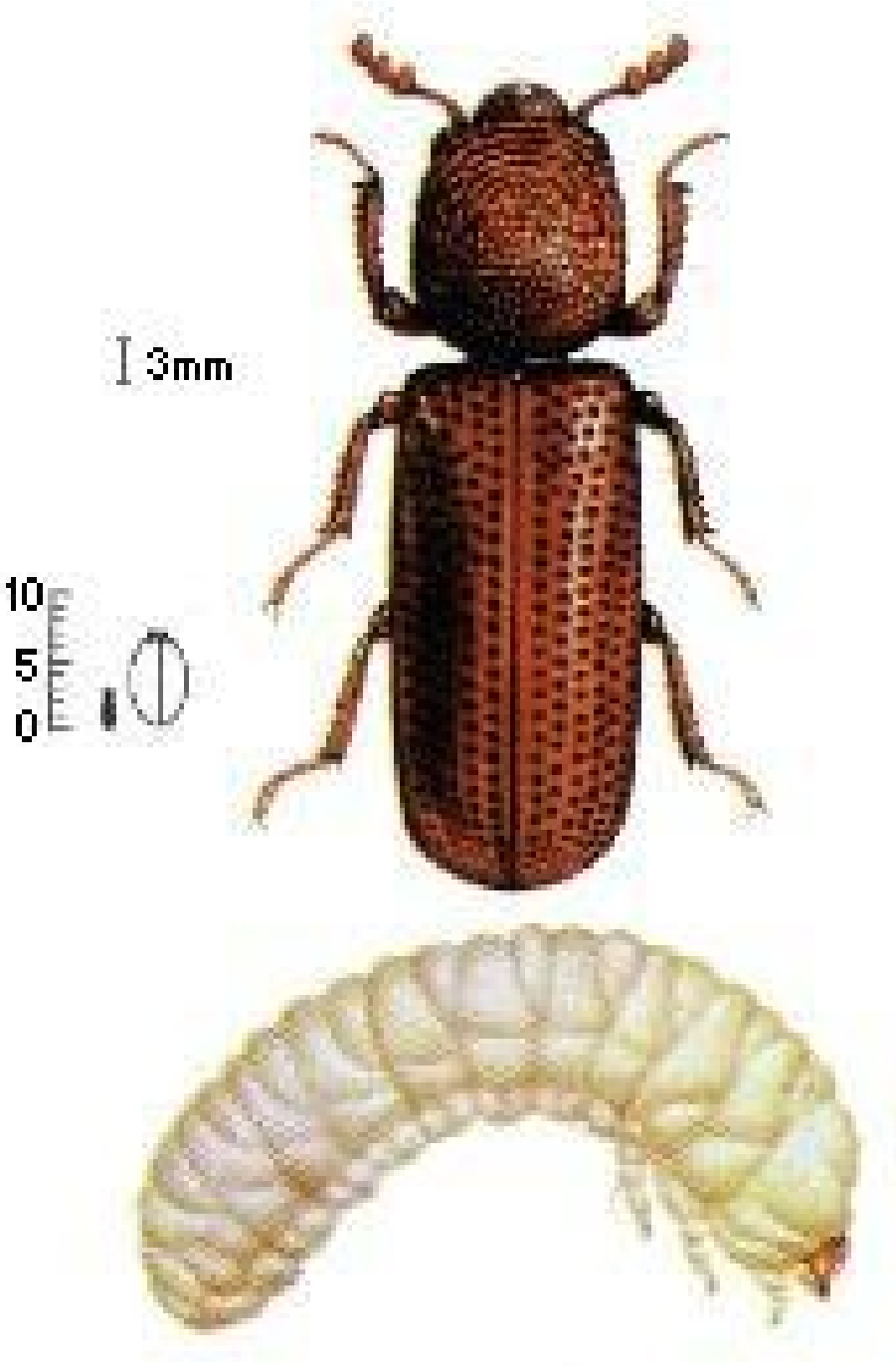
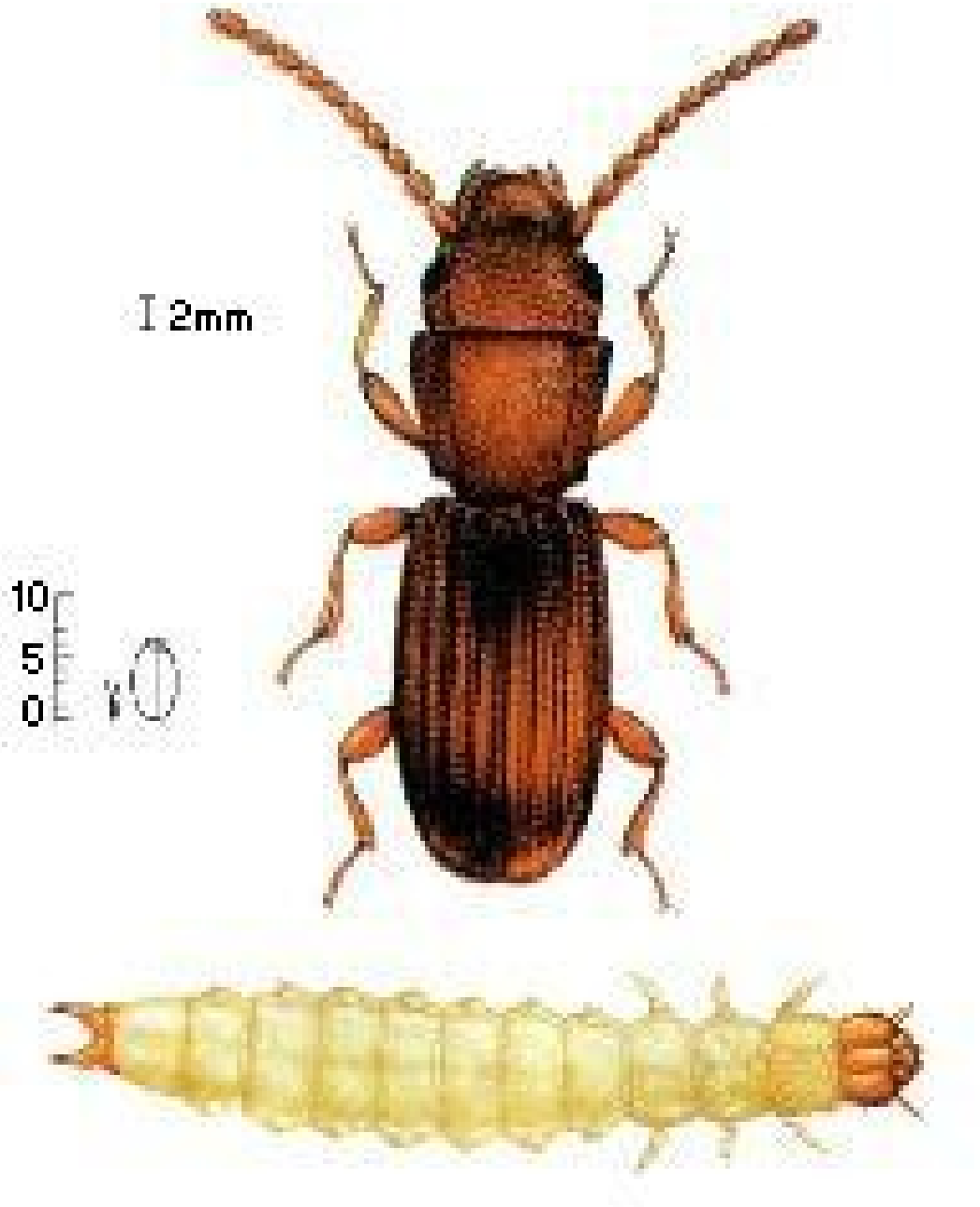
# Lesser Grain Borer



# Flat Grain Beetle



# Control of Stored Products Pests

- Prevention is the first line of defense
  - Pierside inspections of oncoming stores
  - Monthly inspections of storerooms
  - Sanitation
  - Stock rotation by date
- Corrective control by freezing and sifting products